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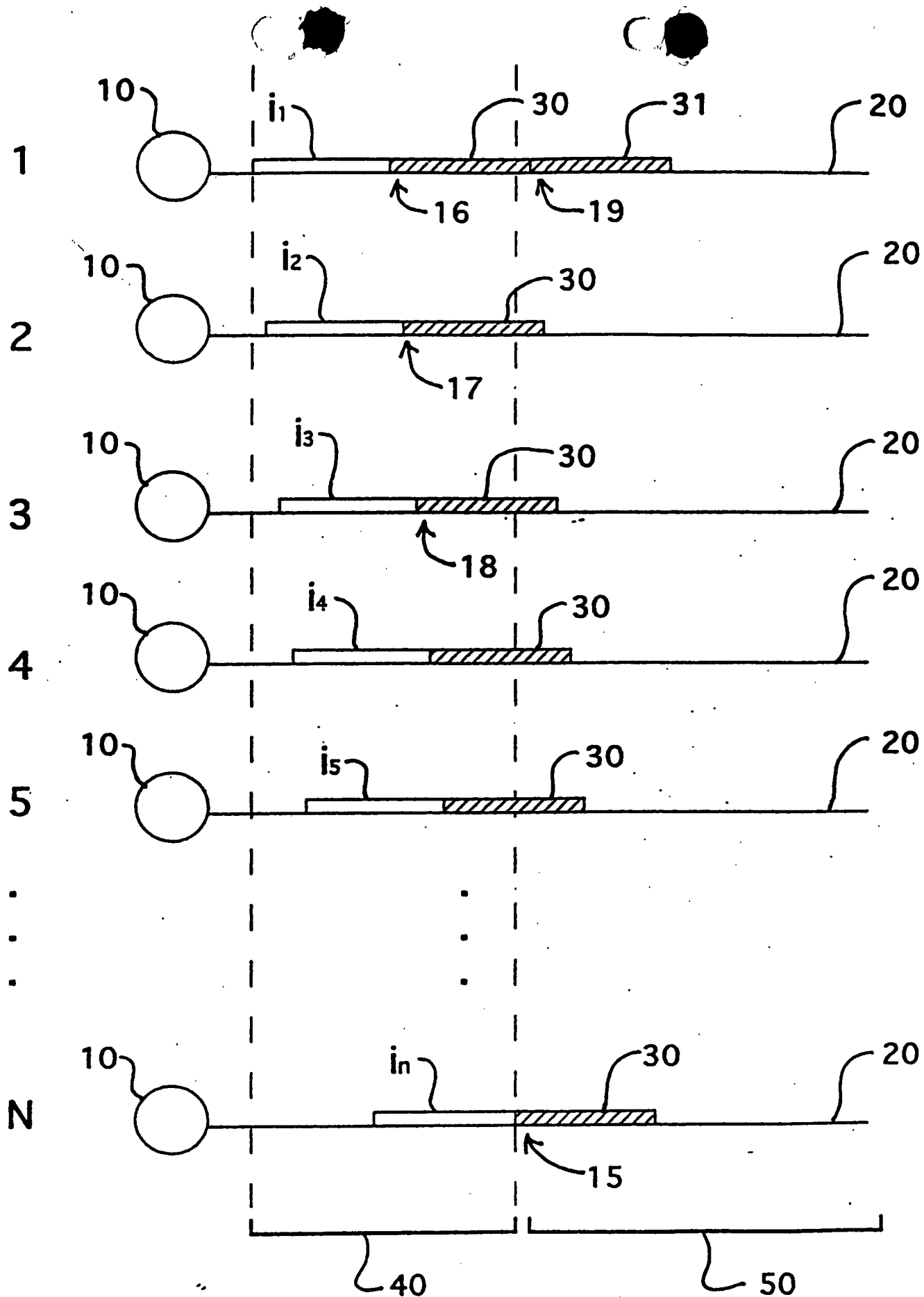


Fig. 1

The diagram illustrates a sequencing cycle. It begins with a DNA strand (20) containing a primer (200) with 3' and 5' ends and a phosphate group (p). A sequencing primer (10) is annealed to the 3' end of the primer (200). The process then involves an "anneal/ligate (204)" step, where a labeled nucleotide (202) is ligated to the 3' end of the primer (200). The labeled nucleotide (202) is shown with a 3' end, a hydroxyl group (HO), and a phosphate group (OP(=O)(O-)NH-Bt*). This is followed by an "identify/hydrolyze (206)" step, which results in the labeled nucleotide (202) being attached to the primer (200) and the phosphate group (p) being removed. The cycle then repeats (208).

Fig. 2

Diagram illustrating a nucleic acid sequencing cycle:

- Initial State:** A template strand (20) is shown with a primer (300) annealed to it. The primer (300) has a 5' end and a 3' end labeled -OH.
- Step 1:** **anneal/ligate (304)**. A second primer (302) is added. The second primer (302) has a 5' end labeled with a fluorescent group ($OP(=O)(O-)O-$) and a 3' end labeled with a cleavable linker ($RRRR-Bt^*$).
- Step 2:** **identify/hydrolyze w/RNase H (308)**. The second primer (302) is extended by a polymerase (310) to a third primer (312) which has a 3' end labeled with a cleavable linker ($RR-OH$).
- Step 3:** **cap via polymerase extension (310)**. The third primer (312) is extended to a fourth primer (314) which has a 3' end labeled with a cleavable linker ($RR-OH$).
- Step 4:** **repeat (314)**. The cycle is repeated.

Fig. 3a

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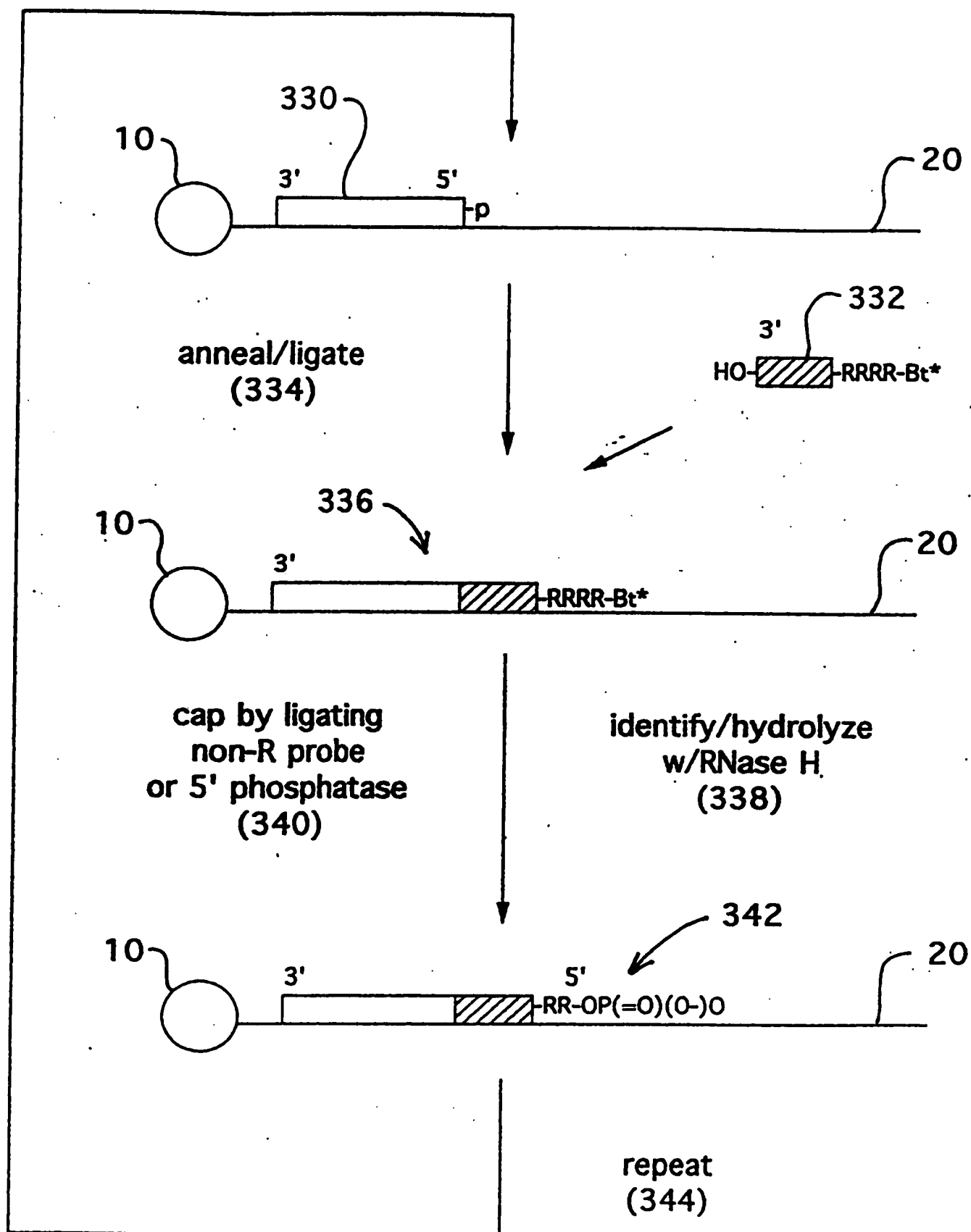


Fig. 3b

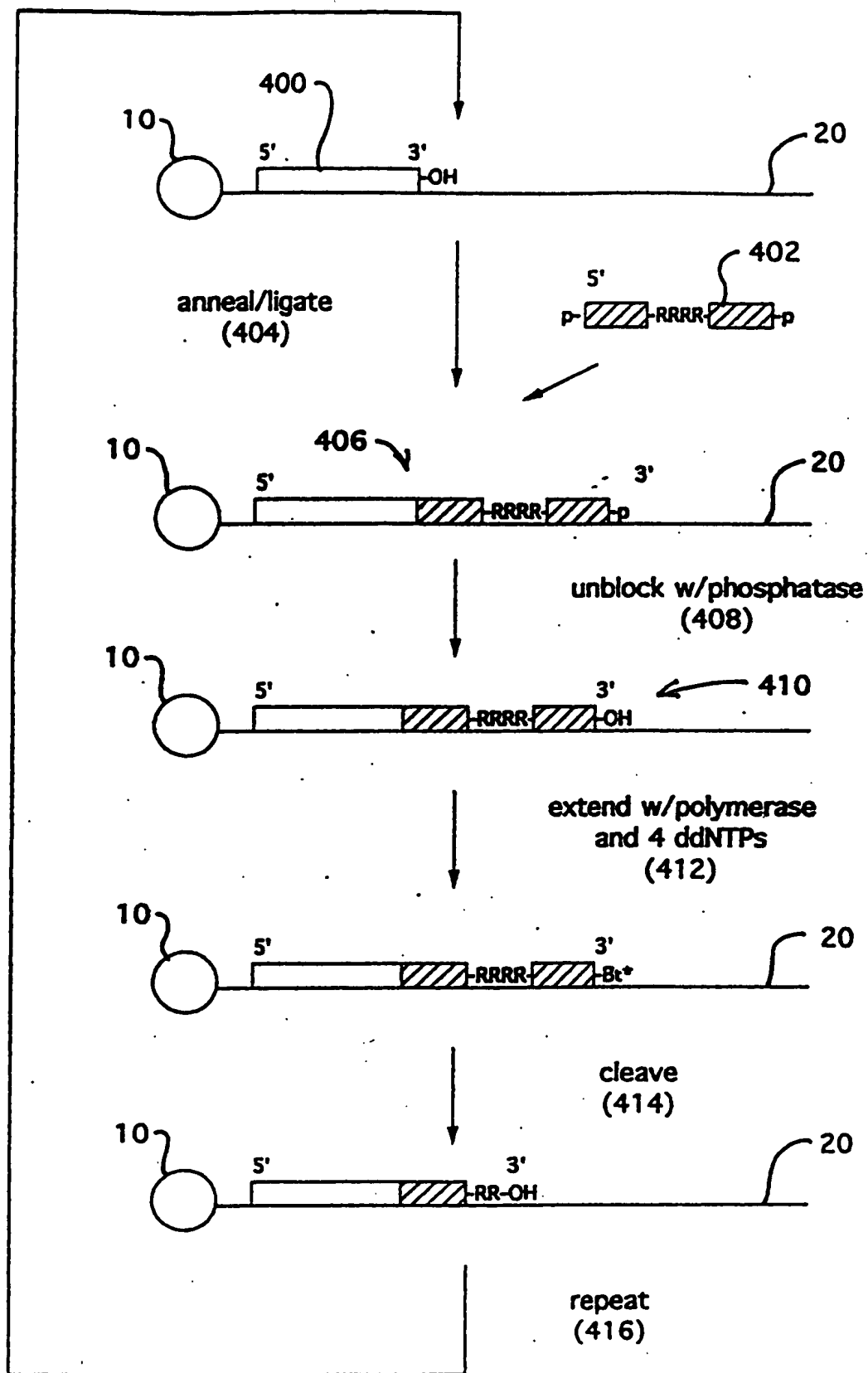


Fig. 4